

## Montana Weather/Precipitation Summary

**April 2015** by NOAA's National Weather Service Great Falls Montana

Overall, there were no real cool or warm periods in April. The greatest temperature departures from normal occurred at the end of the month, when temperatures averaged 15 to 20 degrees above normal. The upper level flow pattern changed somewhat in April, with a persistent, but weaker ridge over the western U.S. This pattern is shown in Figure 1. This brought temperatures closer to normal across the state, with mostly below normal precipitation.

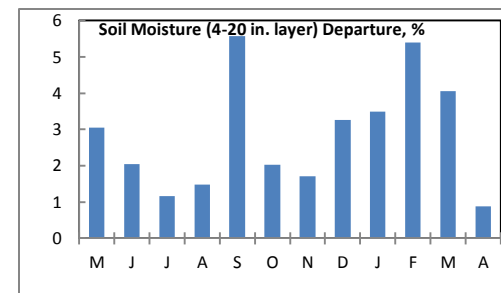
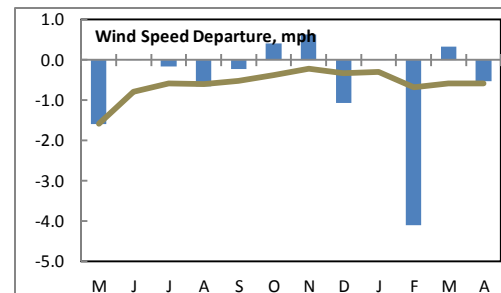
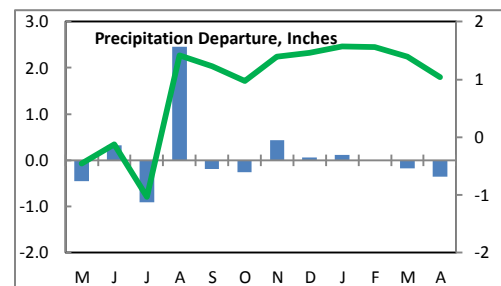
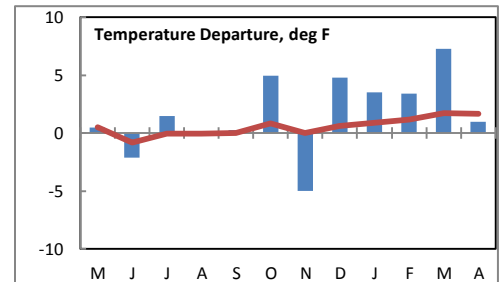
Statewide composite temperatures averaged 1.1°F above normal for the month. This was the smallest monthly temperature anomaly since September. The temperature anomalies ranged from -2.5°F at Three Forks to +2.3°F at Lewistown (Fig. 2). The warmest average monthly temperature was 49.8°F at Hysham, and the coolest was 29.3°F at Yellow Mule (Madisons). This was the 60th warmest April of record, and the warmest since 2012. For the past 12-months, the statewide composite average temperature is 1.7°F above normal. The past five months have had warm departures, and 8 of the last 12 months have had warmer than normal temperatures. The temperature range of 87°F for April (88 to 1) was the smallest since 2011.

The monthly departure from normal for precipitation across Montana is shown in Figure 3. Above normal precipitation was limited to a band from near Dillon to Malta. Much of the state recorded below normal values. The highest amount was 5.20-inches at Brackett Creek (Gallatin County) and 3.17-inches at Norris Madison. Statewide, this month averaged 0.95-inches, or 0.36-inches below normal. The statewide composite precipitation for the past 12 months is 1.04-inches above normal. Snowfall was below normal. The statewide average was 2.2-inches, or 3.3-inches below normal. The heaviest amount was 29.5-inches near Mystic Lake. Statewide seasonal (Oct-Apr) snowfall averages are 11.2 inches below normal.

The statewide average winds were below normal this month, ranking as the 11<sup>th</sup> calmest April of record. The statewide composite average was 9.3 mph, 0.5 mph above normal. The 12-month average is running 0.6-mph below average. The fastest average speed was 15.8 mph at Deep Creek RAWS, while Poplar recorded an average of 13.8-mph. The fastest measured gust of the month, 66 mph, occurred near Ingomar on the 14<sup>th</sup>.

With a lack of moisture across most of the state, the soil moisture values have dried out somewhat. The April average was 0.9-points above the monthly normal. This month ranks as the third wettest of record. Records began in 1995.

Refer to NCDC's State of the Climate report for the latest monthly discussion:  
<http://www.ncdc.noaa.gov/sotc/>.



**Apr 1-8**

April started with slightly cooler than normal temperatures. A storm system on the 4<sup>th</sup> and 5<sup>th</sup> brought heavy snow to the western mountains and southern Montana. Six inches of snow fell at East Glacier, and up to 10 inches in the Livingston area. The coolest temperature of the month occurred on the second when Whiskey Creek dropped to 1°F on the 2<sup>nd</sup>

**Apr 8-15**

Windy conditions occurred on the 14<sup>th</sup> associated with a cold front, with gusts over 60 mph at several locations in central and eastern Montana on the 14<sup>th</sup>. Snow behind the front totaled five inches at Dillon, six inches at Bozeman and Billings, and over a foot near Red Lodge.

**Apr 16-30**

The rest of the month brought a variety of weather as well. On the 22<sup>nd</sup>, thunderstorms dropped pea-size hail near Deer Lodge. Thunderstorms were again seen across eastern Montana on the 24<sup>th</sup>. Up to six inches of snow fell at Georgetown Lake on the 26<sup>th</sup>. Windy conditions associated with thunderstorms brought 63 mph gusts to Twin Bridges on the 29<sup>th</sup>.

**Precipitation/convection**

Severe convective weather occurred on one day in April. The normal for April is one day. Non-severe thunderstorms were observed on the 22<sup>nd</sup> around Deer Lodge and 24<sup>th</sup> in eastern Montana.

**October through April**

The water-year-to-date average temperature was above normal. The average of 33.6°F is the 7<sup>th</sup> warmest of record, and the warmest since 2011-2012. Precipitation averaged 6.12", and the 61<sup>st</sup> driest of record. This is close to the mean, 0.18" below normal. Seasonal snowfall of 43.8" is the 34<sup>th</sup> lowest of record, and the lowest since 2005. Winds averaged 9.2 mph, or the 20<sup>th</sup> calmest of record. This is the calmest such period since 2009-10.

**April summary information:**

<b>High Temperature</b>	88°F at Brandenburg (14 <sup>th</sup> ) & Roundup (29 <sup>th</sup> )	<b>Greatest Precip</b>	3.17" at Norris Madison
<b>Low Temperature</b>	1°F at Whiskey Creek (2 <sup>nd</sup> )		5.20" at Brackett Creek SNOTEL (Gallatin)
<b>Warmest Ave Temp</b>	49.8°F at Hysham	<b>Peak Wind Gust</b>	66 mph near Ingomar (14 <sup>th</sup> )
<b>Coolest Ave Temp</b>	29.3°F at Yellow Mule		
<b>Range of Temp departures</b>	-2.5°F at Three Forks to +2.5°F at Lewistown	<b>Highest Ave Wind</b>	13.8 mph at Poplar 15.8 mph at Deep Creek
<b>21 city mean monthly Temperature/Normal</b>	43.8/42.8F 1.0F above normal. 60 <sup>th</sup> warmest of record (since 1880). 55 <sup>th</sup> percentile. Oct-Apr 33.6/30.8 2.8F above normal. 7 <sup>th</sup> warmest of record.	<b>20 city mean monthly wind speed/Normal</b>	9.3 mph/9.8 mph; 11 <sup>th</sup> calmest of record (since 1936). 14 <sup>th</sup> percentile. Oct-Apr 9.2 mph/9.8 0.7-mph below normal. 20 <sup>th</sup> calmest of record.
<b>22 city mean monthly precipitation/Normal</b>	0.95/1.31" – 73% of normal. 41 <sup>st</sup> driest of record (since 1880). 30 <sup>th</sup> percentile. Oct-Apr 6.12"/ 6.30" – 0.18" below normal. 61 <sup>st</sup> driest of record.		

### Historical Rank of Precipitation (inches) for the Current Month and Water Year to Date

Location	Apr	% of Norm	Rank	Pcntl	Oct 1 – Apr 30	% of norm	Rank	Pcntl	Years
Baker	0.83	93%			3.27	82%			17
Billings	1.57	90%	79	68	4.81	69%	48	42	114
Belgrade	1.79	112%	59	75	4.56	78%	19	23	78
Butte	0.88	75%	48	39	3.98	84%	43	35	121
Cut Bank	0.15	19%	12	10	3.99	148%	85	79	108
Dillon	1.19	111%	51	68	2.69	78%	26	34	75
Glasgow	1.19	140%	80	68	4.26	123%	78	68	115
Great Falls	0.89	63%	47	37	5.33	100%	57	46	123
Havre	0.33	39%	23	16	4.06	119%	64	47	135
Helena	0.53	54%	22	15	3.98	105%	43	31	137
Jordan	0.43	40%			3.35	92%			17
Kalispell	0.35	28%	8	6	11.62	135%	113	93	121
Lewistown	1.75	124%	88	73	6.36	108%	62	52	119
Livingston	1.29	73%	59	51	4.69	79%	30	26	112
Miles City	0.45	33%	29	20	1.91	46%	4	2	138
Missoula	0.46	38%	22	15	8.48	127%	102	76	134
Mullan Pass	1.42	47%	13	16	31.23	109%	46	62	74
Wolf Point	0.59	63%			2.13	62%			17
Glendive	0.87	68%	55	45	3.99	90%	50	43	115
Sidney	0.39	37%	19	24	2.97	65%	18	23	75
BZN-MSU	2.14	93%	91	65	8.23	90%	71	52	136

Rankings and Percentiles are 1=driest, higher numbers=wetter.

For an automated version of this chart, updated daily, go to

<http://www.wrh.noaa.gov/tfx/dx.php?wfo=tfx&type=&loc=products&fx=PCPNTOTALS>

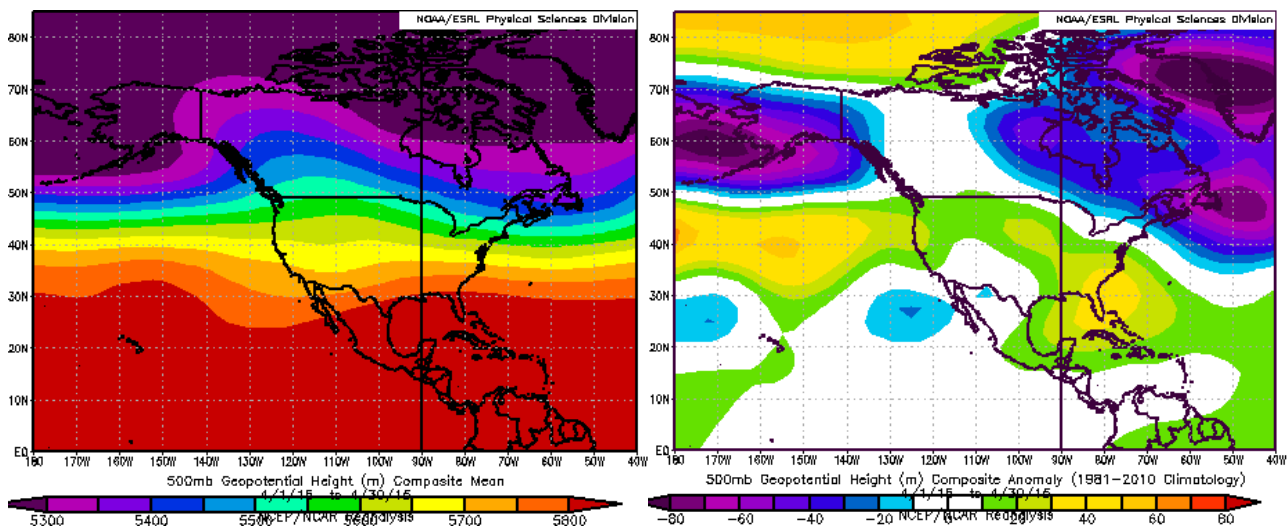
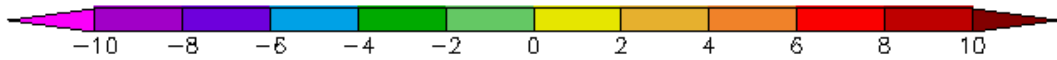
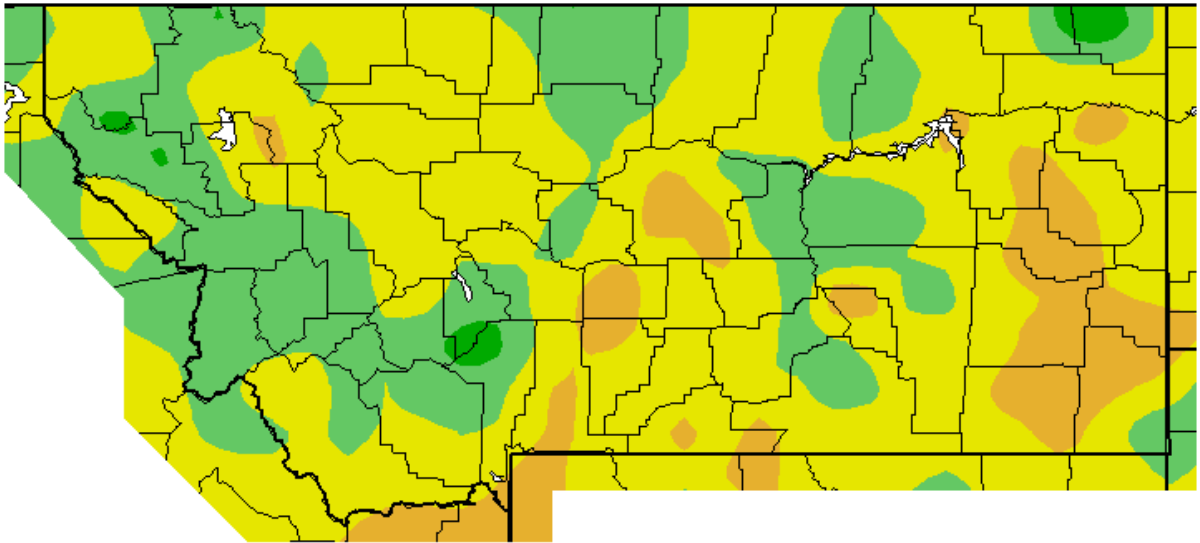
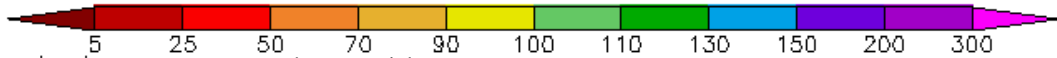
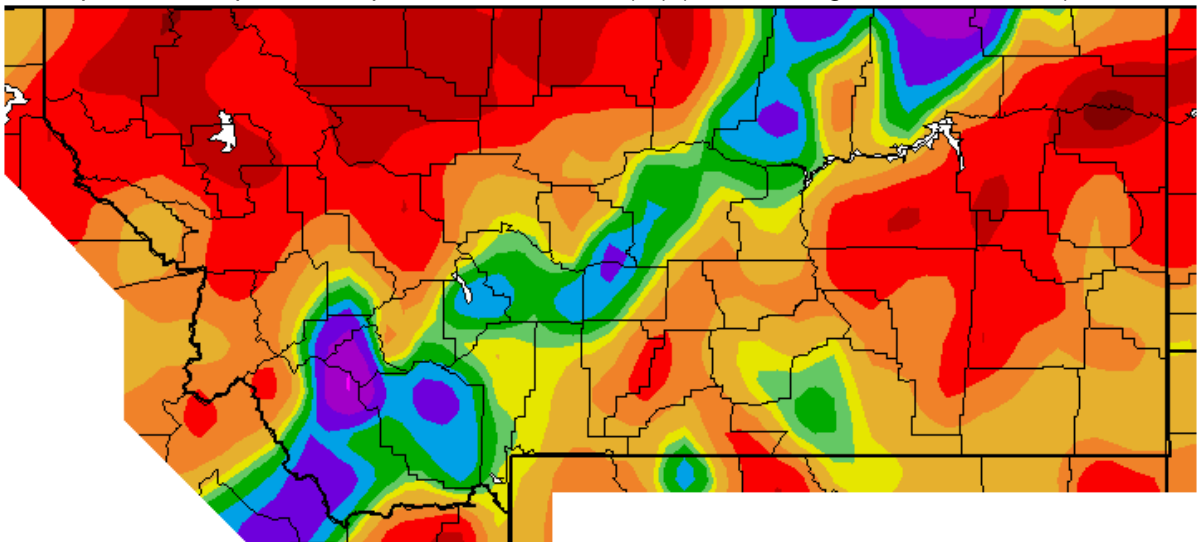


Figure 1. Mean flow at 500 millibars (~18,000 ft) for this month (top-left) and departure from normal (top-right).



**Figure 2.** April 2015 temperature departures from normal (°F) (Western Region Climate Center).



**Figure 3.** April 2015 precipitation departures from normal (percent) (Western Region Climate Center).

For a state map of % of normal water year precipitation (updated around the 7<sup>th</sup> of each month), go to:  
<http://www.wrh.noaa.gov/tfx/climate/monthlysum/climatesum.php?wfo=txf>

For the latest information on mountain snowpack from the NRCS, go to: <http://www3.wcc.nrcs.usda.gov/snow/index.html>

For the latest U.S. Drought Monitor, issued weekly by the National Drought Mitigation Center, USDA and NOAA, go to:  
<http://droughtmonitor.unl.edu/>

These data are preliminary and have not undergone final QC by NCDC. Therefore, these data are subject to revision. Final and certified climate data can be accessed at the National Climatic Data Center (NCDC) <http://www.ncdc.noaa.gov>. Many more links are on the Drought Information Page of the NWS Great Falls web site at <http://www.wrh.noaa.gov/tfx/main/drought.php?wfo=txf>. The climatological record for normals is 1981-2010. The ranking period for temperature, precipitation and snowfall is since 1880. The ranking period for wind speeds is since 1936. The ranking period for soil moisture is since 1995.